



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

CPH3114 — PNP Epitaxial Planar Silicon Transistor DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- Large current capacity
- Low collector-to-emitter saturation voltage
- High-speed switching
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)
- High allowable power dissipation

Specifications

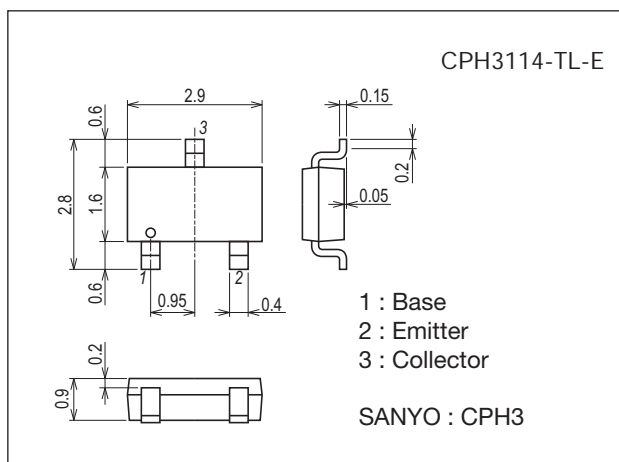
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		-15	V
Collector-to-Emitter Voltage	V _{CEO}		-15	V
Emitter-to-Base Voltage	V _{EBO}		-5	V
Collector Current	I _C		-1.5	A
Collector Current (Pulse)	I _{CP}		-3	A
Base Current	I _B		-300	mA
Collector Dissipation	P _C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

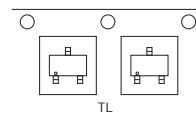
7015A-003



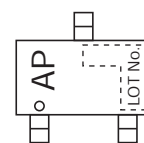
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

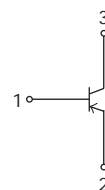
Packing Type: TL



Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

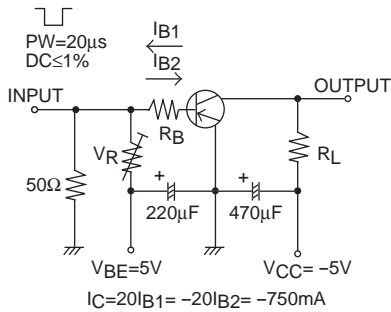
<http://www.sanyosemi.com/en/network/>

CPH3114

Electrical Characteristics at $T_a=25^\circ\text{C}$

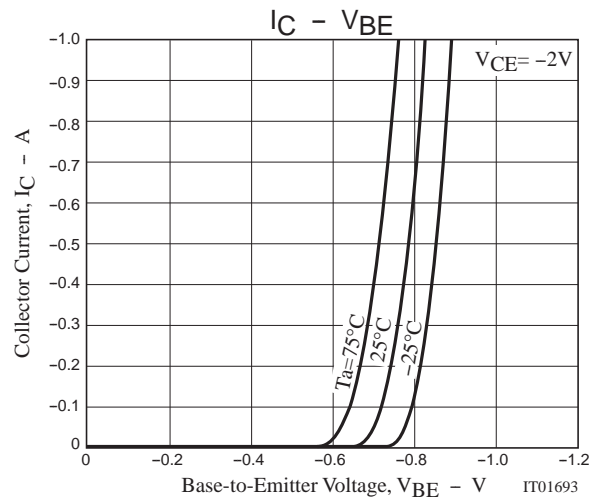
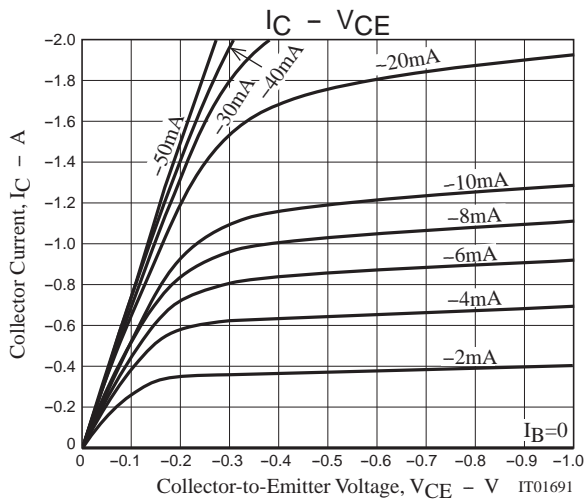
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -12\text{V}, I_E = 0\text{A}$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE} = -2\text{V}, I_C = -300\text{mA}$		350		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		17		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -750\text{mA}, I_B = -15\text{mA}$		-120	-180	mV
	$V_{CE(sat)2}$	$I_C = -1.5\text{mA}, I_B = -30\text{mA}$		-210	-320	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -750\text{mA}, I_B = -15\text{mA}$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}			90		ns
Fall Time	t_f			15		ns

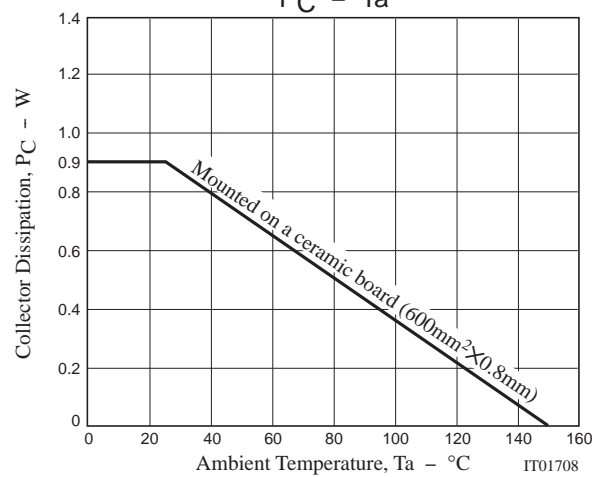
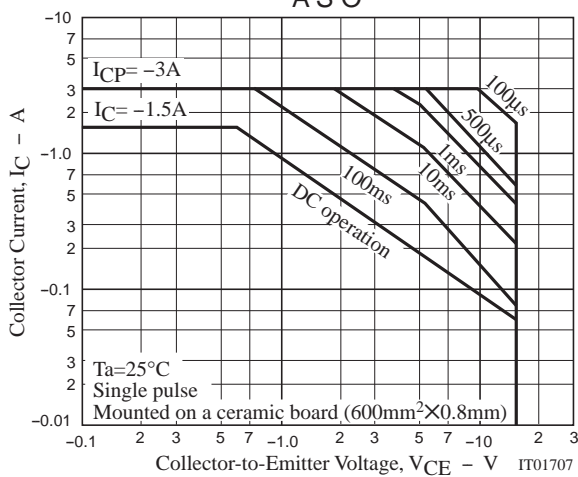
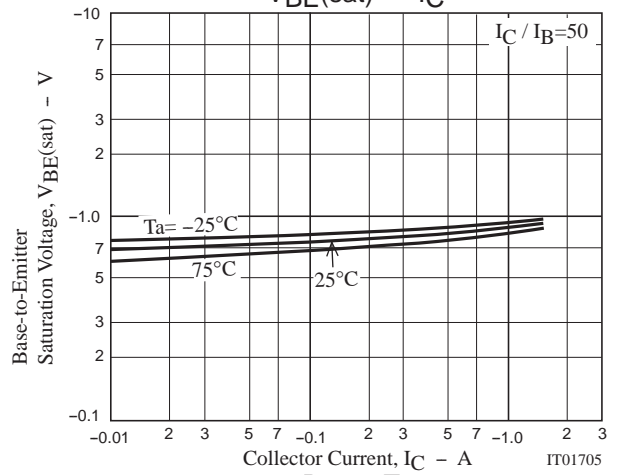
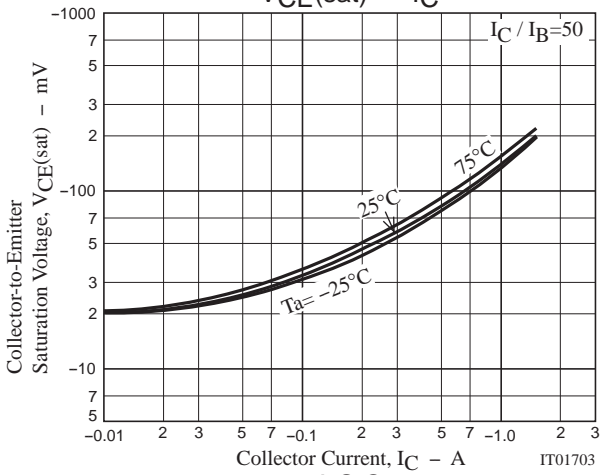
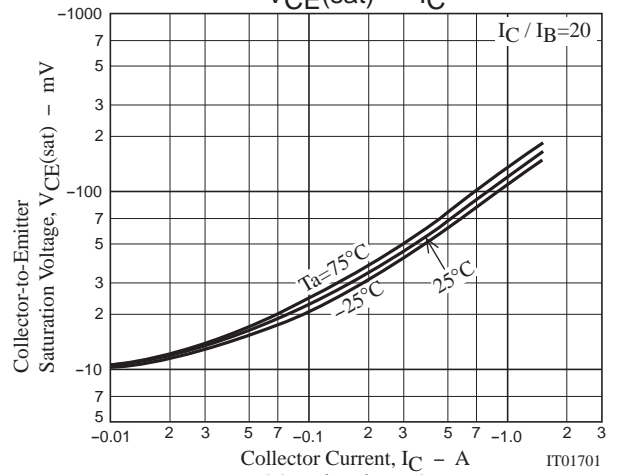
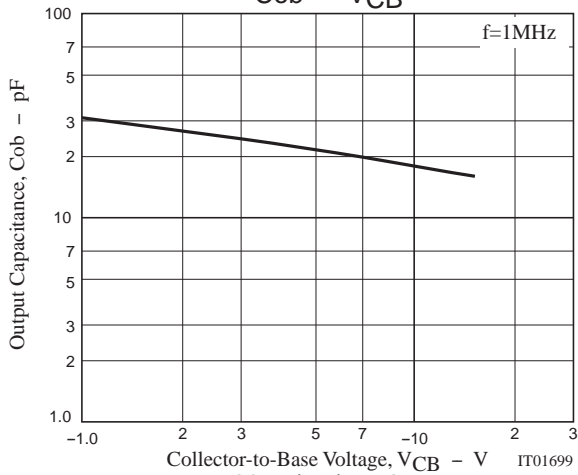
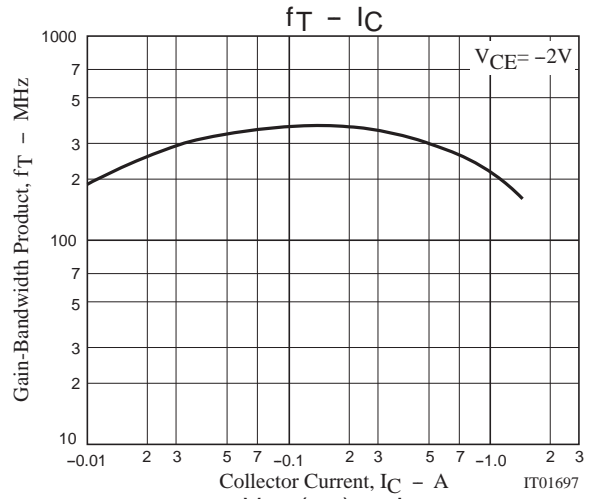
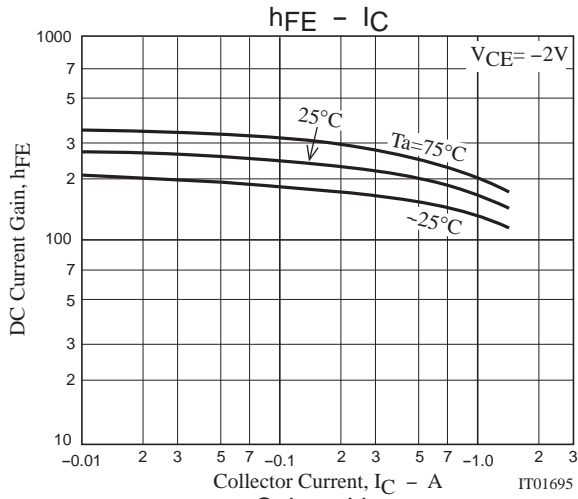
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
CPH3114-TL-E	CPH3	3,000pcs./reel	Pb Free





Embossed Taping Specification

CPH3114-TL-E

1. Packing Format

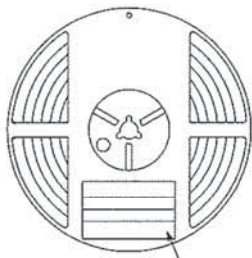
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH3	CPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

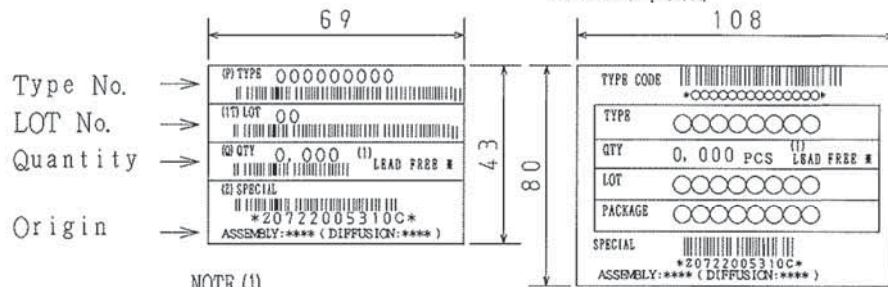
Outer box label

It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label



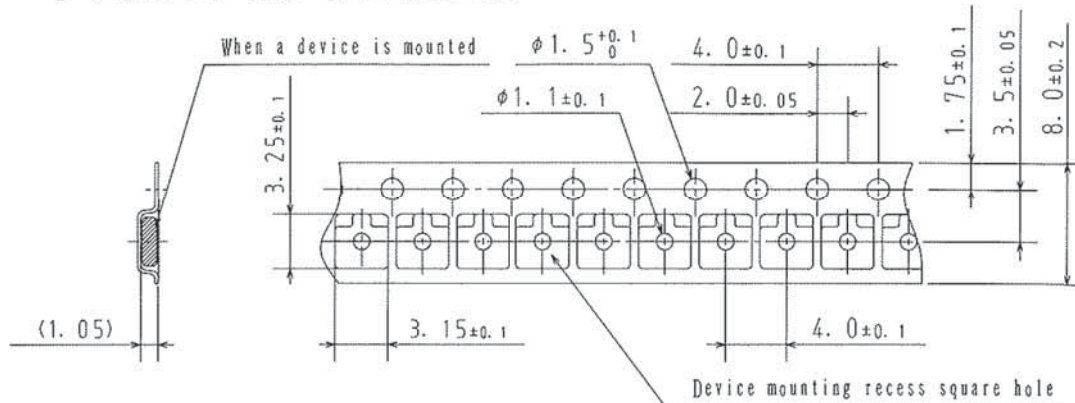
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

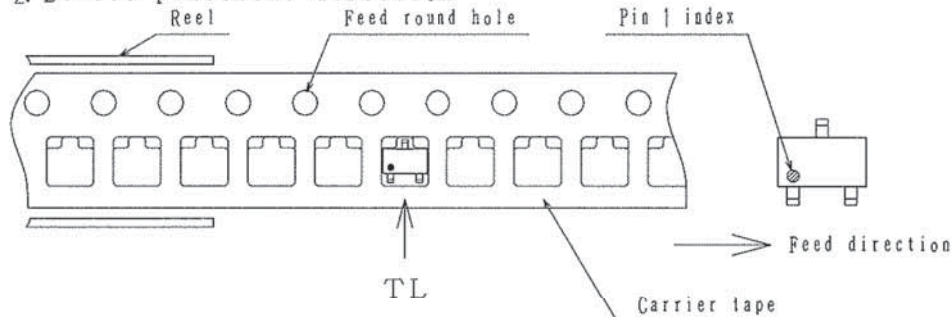
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



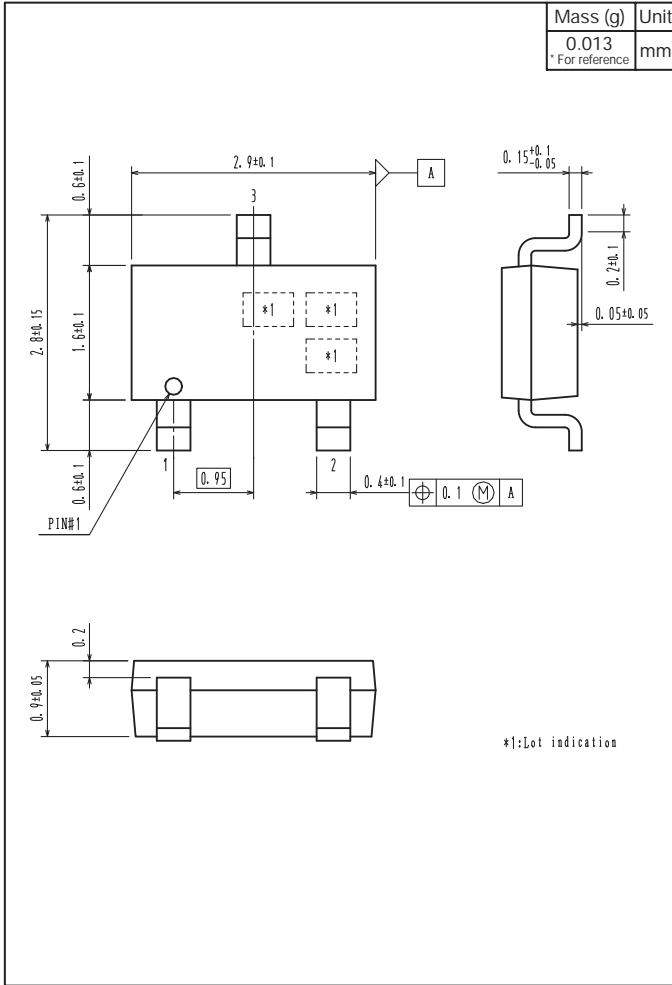
2-2. Device placement direction



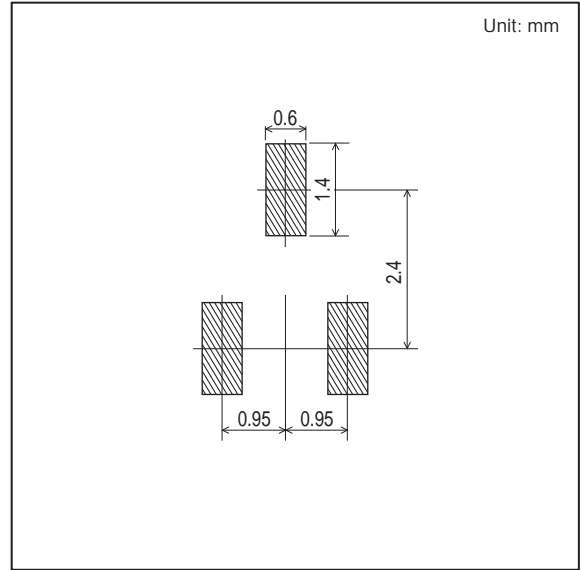
Those with one electrode terminal on the feed hole side.....TL

CPH3114

Outline Drawing CPH3114-TL-E



Land Pattern Example



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